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AGENDA ITEM 4a

TO: MEMBERS OF THE INVESTMENT COMMITTEE

- I. SUBJECT:** Risk Management Reporting
- II. PROGRAM:** Total Fund
- III. RECOMMENDATION:** Information
- IV. ANALYSIS:**

INTRODUCTION

The investment policy for the Asset Allocation Strategy (Attachment 1), approved May 12, 2008, requires that the asset allocation and the CalPERS total fund be managed within target forecast annual tracking error limits. Section VI.F of the Asset Allocation Policy states:

The Program will be managed within a target forecast annual tracking error of 0.75% using the CalPERS Risk Management System. This implies that over any one-year period, there will be less than 5% probability that the active asset allocation return will be less than negative 1.2%

The CalPERS total fund shall be managed with a target forecast annual tracking error of 1.5%, inclusive of active asset allocation and other active management decisions, using the CalPERS Risk Management System.

The asset allocation tracking error is due to allocation deviations from policy targets (active asset allocation) and is limited to 75 basis points. The total fund tracking error is limited to 150 basis points and includes both active asset allocation and security and sector selection within asset classes.

The CalPERS Risk Measurement System (RMS) is an effective tool for calculating these tracking error measures. The RMS generates risk forecasts (portfolio risk, benchmark risk, and tracking error) using the underlying characteristics of each holding in the portfolio. These metrics are generated at each portfolio, asset class, and total fund level. The metrics at the asset class and total fund levels are shown in Attachment 3. The tracking error is shown in Attachment 4. The CalPERS Total Fund Tracking Error report (Attachment 4) is currently used by staff on a monthly basis to monitor current tracking error forecasts relative to these limits and to compare realized tracking error versus forecast tracking error.

This item is being discussed with the Committee since it is the first such report. In the future these reports will be provided monthly as part of the CIO report.

BACKGROUND

The RMS was implemented in June 2005 by the Risk Management Unit. RMS provides an enterprise-wide assessment of the investment and risk profile of the total fund. RMS has three primary components:

- A custom database to hold portfolio, benchmark and market data;
- Software (Barra TotalRisk) to perform the risk calculations; and,
- A web-based reporting system to distribute monthly risk reports over the CalPERS intranet.

Barra TotalRisk is a holdings-based risk model that aggregates risk based on the characteristics of individual securities. The holdings are uploaded monthly to perform the risk analysis. Barra TotalRisk uses historical asset return information to forecast risk measured in terms of standard deviation and projects one year into the future.

MONITORING RISK AT CALPERS

The Risk Management Unit uses RMS to measure and monitor the risk of the CalPERS fund in terms of both total risk and tracking error at the portfolio, asset class and total fund levels. Tracking error is the annualized standard deviation of the difference between the portfolio return and the benchmark return and is a measure of excess risk. Tracking error at the total fund arises from two sources: active asset allocation at the asset class level, and security and sector selection within asset classes. Total risk measures the forecast volatility of expected returns.

A detailed discussion of the risk reports is included as Attachment 2. The attached risk reports (Attachments 3 and 4) provide a summary of the most recent forecasts of total risk and tracking error for the total fund and the asset class levels. Each report also includes a graph which tracks the accuracy of the total fund risk forecasts over time by comparing the forecast with the subsequent realized risk. The realized risk is the standard deviation of actual returns calculated one year after the forecast date. The tracking error report also provides risk budgeting information for the total fund and for active asset allocation.

Since the adoption of the RMS, the Risk Management Unit has been focused on implementing the system and making modifications and improvements to the risk measurement of the private asset classes by creating proxy public security portfolios. The Risk Management Unit is also currently working to enhance and enlarge the concept of risk to include other metrics such as counterparty risks, derivatives exposures, currency exposures, and leverage.

V. STRATEGIC PLAN:

Goal (VIII) Manage the risk and volatility of assets and liabilities to assure that sufficient funds are available, first, to pay benefits and, second, to minimize and stabilize contributions.

VI. RESULTS/COSTS:

This item provides information to the Investment Committee members on the assets and performance of the fund. There are no additional costs associated with this agenda.

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